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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/625,209	07/22/2003	Ki-Dong Lee	51876P380	8371

8791 7590 04/19/2007
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EXAMINER	
MAIS, MARK A	
ART UNIT	**PAPER NUMBER**
2616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/19/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/625,209	LEE ET AL.	
	Examiner	Art Unit	
	Mark A. Mais	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date *7/03; 5/05; 7/05*.

4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d).

Information Disclosure Statement

2. The information disclosure statements (IDSs) were filed on July 22, 2003, May 3, 2005, and July 8, 2005. The submissions are in compliance with the provisions of 37 C.F.R. 1.97. According, the examiner considered the IDSs.

Claim Rejections - 35 USC § 102/103

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-11 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ketseoglou et al. (USP 5,732,076).

6. With regard to claim 1, Ketseoglou et al. discloses an apparatus for dynamically allocating resource **[dynamically allocates timeslots based on user demand, col. 31, lines 15-18 and 42-47]** in an interactive satellite multimedia system **[the allocation of timeslots is resource allocation, irrespective of the wireless multimedia system and/or mobile terminals being used (i.e., cell or satellite); in the alternative, allocation of timeslots in a time-based system (FDD/TDMA or TDD, col. 1, lines 30-41) is well known to those skilled in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used timeslots in order to allocate system resources such as data rate or bandwidth in order to allocate more timeslots to applications such as voice and less timeslots to data application (col. 9, line 65 to col. 10, line 5)]**, comprising:

resource request amount collection means for accumulating a requested resource amount corresponding to each of terminals during a super-frame period **[Fig. 25, base station unit 1050 (with units 1052 and 1053) uses composite frames in Figs. 15-16 to schedule timeslots per mobile terminal based on the requested resource amount (interpreted as dynamic user**

demand, col. 31, lines 15-18 and 42-47); base station 1050 can also utilize all timeslots of only one time-based system to allocate timeslots (for example, 24 GSM users or 32 TDD users, col. 30, lines 1-11); the superframe can be interpreted as each of composite frames 15-17];

resource request amount processing means for dividing an accumulated requested resource amount by the number of frame pairs in a super frame and storing a sum of a result of dividing and rounding up a remain of the division to a nearest integer as a request amount of each corresponding terminal uses **[the system grants bandwidth based on Table 8-3 (col. 16, lines 1-18); Table 8-4 (col. 16, lines 31-45); and Table 8-5 (col. 17, lines 51-60); in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11); the system can also different timeslot allocations including irregular combinations into composite frames such as Figs. 15-18]**; and

resource allocation means for deciding a time slot allocated at each of terminals corresponding to a frame pair based on optimal allocation amount, which is decided based on the request amount by the requested amount processing means **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount]**;.

6. With regard to claim 6, Ketseoglou et al. discloses a method for dynamically allocating resources in an interactive satellite multimedia system **[dynamically allocates timeslots based on user demand, col. 31, lines 15-18 and 42-47; the allocation of timeslots is resource allocation, irrespective of the wireless multimedia system and/or mobile terminals being used (i.e., cell or satellite); in the alternative, allocation of timeslots in a time-based system (FDD/TDMA or TDD, col. 1, lines 30-41) is well known to those skilled in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used timeslots in order to allocate system resources such as data rate or bandwidth in order to allocate more timeslots to applications such as voice and less timeslots to data application (col. 9, line 65 to col. 10, line 5)]**, comprising the steps of:

a) accumulating a request amount of resource corresponding to each of terminals during a super-frame period **[Fig. 25, base station unit 1050 (with units 1052 and 1053) uses composite frames in Figs. 15-16 to schedule timeslots per mobile terminal based on the requested resource amount (interpreted as dynamic user demand, col. 31, lines 15-18 and 42-47); base station 1050 can also utilize all timeslots of only one time-based system to allocate timeslots (for example, 24 GSM users or 32 TDD users, col. 30, lines 1-11); the superframe can be interpreted as each of composite frames 15-17]**;

b) dividing the accumulated request amount of resource by frame pairs included in one super frame and remembering a sum of a result of dividing and rounding off a remain of the division to a nearest integer as a resource request amount **[the system grants bandwidth based on Table 8-3 (col. 16, lines 1-18); Table 8-4 (col. 16, lines 31-45); and Table 8-5 (col. 17, lines 51-60); in the case of 32 users requesting the same bandwidth allocation, the system**

necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11); the system can also different timeslot allocations including irregular combinations into composite frames such as Figs. 15-18]; and

c) deciding an optimal allocation amount based on the resource request amount and deciding a time slot to be allocated to each of terminals based on the optimal allocation amount **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount]**.

7. With regard to claim 11, Ketseoglou et al. discloses a computer readable recording medium storing instructions for executing a method for actively allocation resource in two-way satellite multimedia system **[dynamically allocates timeslots based on user demand, col. 31, lines 15-18 and 42-47; the allocation of timeslots is resource allocation, irrespective of the wireless multimedia system and/or mobile terminals being used (i.e., cell or satellite); in the alternative, allocation of timeslots in a time-based system (FDD/TDMA or TDD, col. 1, lines 30-41) is well known to those skilled in the art. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used timeslots in order to allocate system resources such as data rate or bandwidth in order to allocate more timeslots to applications such as voice and less timeslots to data application (col. 9, line 65 to col. 10, line 5)]**, comprising functions of:

a) accumulating a request amount of resource corresponding to each of terminals during a super-frame period **[Fig. 25, base station unit 1050 (with units 1052 and 1053) uses composite frames in Figs. 15-16 to schedule timeslots per mobile terminal based on the requested resource amount (interpreted as dynamic user demand, col. 31, lines 15-18 and 42-47); base station 1050 can also utilize all timeslots of only one time-based system to allocate timeslots (for example, 24 GSM users or 32 TDD users, col. 30, lines 1-11); the superframe can be interpreted as each of composite frames 15-17]**;

b) dividing the accumulated request amount of resource by frame pairs included in one super frame and remembering a sum of a result of dividing and rounding off a remain of the division to a nearest integer as a resource request amount **[the system grants bandwidth based on Table 8-3 (col. 16, lines 1-18); Table 8-4 (col. 16, lines 31-45); and Table 8-5 (col. 17, lines 51-60); in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11); the system can also different timeslot allocations including irregular combinations into composite frames such as Figs. 15-18]**; and

c) deciding an optimal allocation amount based on the resource request amount and deciding a time slot to be allocated to each of terminals based on the optimal allocation amount **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount]**.

8. With regard to claim 2, Ketseoglou et al. discloses that the resource allocation means completes a time slot allocation schedule for a first frame pair based on an optimal allocation resource amount by deciding how to allocate resource to each of terminals and the time slot allocation schedule is copied for other frame pairs [**in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount; Figs. 13 and 25 shows that the free slot indexes trade time slot allocations with each other (i.e., copied) for all frame pairs, col. 25, lines 30-47 and col. 25, line 61 to col. 26, line 7**].

9. With regard to claim 3, Ketseoglou et al. discloses that the resource allocation means includes:

resource allocation amount deciding an amount terminals; resource allocation deciding of resource allocated means for to each of scheduling means for deciding terminals to be allocated of variable time slot included in a first frame pair based on the amount of resource decided by the resource allocation amount deciding means; and resource allocation schedule copying means for copying an allocation schedule of time slot in the first frame pair for remained frame pairs in same super-frame [**in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30,**

lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount; Figs. 13 and 25 shows that the free slot indexes trade time slot allocations with each other (i.e., copied) for all frame pairs, col. 25, lines 30-47 and col. 25, line 61 to col. 26, line 7; the superframe can be interpreted as each of composite frames 15-17].

10. With regard to claim 4, Ketseoglou et al. discloses that the frame pair is a subset of the super-frame, one of frame pairs is a set of frames or a frame having identical time period, each of frame pairs have identical a time slot allocation type or a frequency bandwidth and different time period comparing to other frame pairs, all frame pairs in one super-frame are subsets and a union of all frame pairs is the super-frame **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount; Figs. 13 and 25 shows that the free slot indexes trade time slot allocations with each other (i.e., copied) for all frame pairs, col. 25, lines 30-47 and col. 25, line 61 to col. 26, line 7; the superframe can be interpreted as each of composite frames 15-17].**

11. With regard to claim 5, Ketseoglou et al. discloses that the resource request amount processing means obtains a result computed by dividing the request resource amount of each terminal by the number of frame pairs in one super-frame and rounding off a result of division to

the nearest integer **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount; Figs. 13 and 25 shows that the free slot indexes trade time slot allocations with each other (i.e., copied) for all frame pairs, col. 25, lines 30-47 and col. 25, line 61 to col. 26, line 7; the superframe can be interpreted as each of composite frames 15-17]**.

12. With regard to claim 7, Ketseoglou et al. discloses that in the step c), a time slot allocation schedule of a first frame pair is decided based on the optimal allocation amount by deciding the optimal allocation amount based on the resource request amount in the step b) and the time slot allocation schedule of the first frame pair is copied and used for other frame pairs **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount; Figs. 13 and 25 shows that the free slot indexes trade time slot allocations with each other (i.e., copied) for all frame pairs, col. 25, lines 30-47 and col. 25, line 61 to col. 26, line 7]**.

13. With regard to claim 8, Ketseoglou et al. discloses that the step c) includes the steps of:

d) deciding how much resource is allocated to each of terminals based on the first frame pair; e) deciding terminals to be allocated of a variable time slot included in the first frame pair base on the optimal allocation amount; and f) copying a time slot allocation schedule of the first time slot to remained frame pair in the same super frame **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount; Figs. 13 and 25 shows that the free slot indexes trade time slot allocations with each other (i.e., copied) for all frame pairs, col. 25, lines 30-47 and col. 25, line 61 to col. 26, line 7; the superframe can be interpreted as each of composite frames 15-17]**.

14. With regard to claim 9, Ketseoglou et al. discloses that in the step d), the optimal allocation amount is decided according to a priority of resource request amount processed at the step b) **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount; Figs. 13 and 25 shows that the free slot indexes trade time slot allocations with each other (i.e., copied) for all frame pairs, col. 25, lines 30-47 and col. 25, line 61 to col. 26, line 7; the superframe can be interpreted as each of composite frames 15-17]**, an additional allocation amount excepting minimum allocation amount is decided by sorting the resource request

amounts from one having higher weight to one having lower weight and a total allocation amount is calculated by adding the additional allocation amount and the optimal allocation amount **[this is interpreted as the situation where competing mobile terminals attempt to seize more bandwidth and request the dynamic assignment of additional bandwidth (interpreted as dynamic user demand, col. 31, lines 15-18 and 42-47; additional bandwidth is then requested, col. 31, lines 56-60); moreover, a prioritization scheme is provided for allocation of additional bandwidth from competing mobile terminals, col. 32, lines 30-38]**.

15. With regard to claim 10, Ketseoglou et al. discloses that in the step b), a result is obtained by dividing the request resource amount of each terminal by the number of frame pairs in one super-frame and rounding off a result of division to the nearest integer **[in the case of 32 users requesting the same bandwidth allocation, the system necessarily divides the result without a need for rounding up (for example, splits 32 slots (16 slots on two different frequencies) into 32 TDD users, col. 30, lines 1-11) (each same-sized timeslot is interpreted as a frame pair); this is interpreted as the optimal allocation amount; Figs. 13 and 25 shows that the free slot indexes trade time slot allocations with each other (i.e., copied) for all frame pairs, col. 25, lines 30-47 and col. 25, line 61 to col. 26, line 7; the superframe can be interpreted as each of composite frames 15-17]**.

Conclusion

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

(a) Ketseoglou et al. (USP 6,130,886), Coexisting communication systems.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark A. Mais whose telephone number is 572-272-3138. The examiner can normally be reached on M-Th 5am-4pm.

18. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Seema Rao can be reached on 571-272-3174. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

19. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAM
March 18, 2007

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